

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:  
Daniel ORTEGA GONZALEZ *et al.*

Serial No.: To Be Assigned

Filed: Herewith

For: ARRAYED WAVEGUIDE GRATING WITH  
REDUCED CROSSTALK

Attorney Docket No.: **KLW-001**

Group Art Unit:

Examiner:

Commissioner for Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Dear Sir:

Preliminary to examination of the above-referenced patent application, please amend the application as follows.

**In the Claims:**

Please amend claims 9, 17 and 18 as follows.

9. An AWG according to claim 1, wherein each output waveguide is a double-mode waveguide.

17. An array waveguide grating (AWG) device according to claim 1, wherein the first and second slab couplers are arranged so that a longitudinal axis of the second slab coupler is substantially perpendicular to a longitudinal axis of the first slab coupler, said output waveguides are arranged to receive zero order output signals imaged at an output face of the second slab coupler, and the AWG device further includes additional

waveguides optically coupled to the second slab coupler for conveying higher order signals comprising at least some first order output signals, away from the second slab coupler.

18. An AWG according to claim 17, wherein the output waveguides are arranged so as to bend away from an area into which non-zero order output signals imaged by the second slab coupler, comprising at least some first order output signals, diverge from the second slab coupler.

**REMARKS**

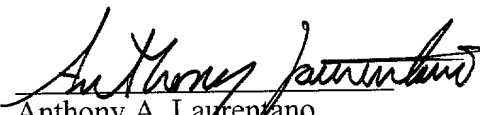
Preliminary to examination of this application, please amend claims 9, 17 and 18 as set forth above. These claim amendments attend to minor formal matters, and are not related to issues of patentability. Support for the amendment to the claims can be found throughout the specification, Figures and claims as originally filed.

Applicants respectfully submit that the foregoing amendments introduces no new matter. Entry of the foregoing Preliminary Amendment is thus in order and requested.

If there are any questions regarding the proposed amendments to the claims 9, 17 and 18, we invite the Examiner to call Applicants' representative at the telephone number listed below.

Respectfully submitted,

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Date: **May 30, 2001**

Parameter	Unit	Value	Unit	Value
Initial temperature	°C	25	Initial temperature	°C
Final temperature	°C	25	Final temperature	°C
Initial pressure	atm	1	Initial pressure	atm
Final pressure	atm	1	Final pressure	atm
Initial volume	L	1	Initial volume	L
Final volume	L	1	Final volume	L
Initial mass	g	1	Initial mass	g
Final mass	g	1	Final mass	g
Initial density	g/L	1	Initial density	g/L
Final density	g/L	1	Final density	g/L
Initial viscosity	Pa·s	1	Initial viscosity	Pa·s
Final viscosity	Pa·s	1	Final viscosity	Pa·s
Initial surface tension	N/m	1	Initial surface tension	N/m
Final surface tension	N/m	1	Final surface tension	N/m
Initial thermal conductivity	W/m·K	1	Initial thermal conductivity	W/m·K
Final thermal conductivity	W/m·K	1	Final thermal conductivity	W/m·K
Initial electrical conductivity	S/m	1	Initial electrical conductivity	S/m
Final electrical conductivity	S/m	1	Final electrical conductivity	S/m
Initial magnetic permeability	H/m	1	Initial magnetic permeability	H/m
Final magnetic permeability	H/m	1	Final magnetic permeability	H/m
Initial dielectric permittivity	F/m	1	Initial dielectric permittivity	F/m
Final dielectric permittivity	F/m	1	Final dielectric permittivity	F/m
Initial refractive index	-	1	Initial refractive index	-
Final refractive index	-	1	Final refractive index	-
Initial absorption coefficient	1/m	1	Initial absorption coefficient	1/m
Final absorption coefficient	1/m	1	Final absorption coefficient	1/m
Initial scattering coefficient	1/m	1	Initial scattering coefficient	1/m
Final scattering coefficient	1/m	1	Final scattering coefficient	1/m
Initial loss tangent	-	1	Initial loss tangent	-
Final loss tangent	-	1	Final loss tangent	-
Initial quality factor	-	1	Initial quality factor	-
Final quality factor	-	1	Final quality factor	-
Initial coupling coefficient	-	1	Initial coupling coefficient	-
Final coupling coefficient	-	1	Final coupling coefficient	-
Initial insertion loss	dB	1	Initial insertion loss	dB
Final insertion loss	dB	1	Final insertion loss	dB
Initial return loss	dB	1	Initial return loss	dB
Final return loss	dB	1	Final return loss	dB
Initial isolation	dB	1	Initial isolation	dB
Final isolation	dB	1	Final isolation	dB
Initial crosstalk	dB	1	Initial crosstalk	dB
Final crosstalk	dB	1	Final crosstalk	dB
Initial delay	ns	1	Initial delay	ns
Final delay	ns	1	Final delay	ns
Initial group delay	ns	1	Initial group delay	ns
Final group delay	ns	1	Final group delay	ns
Initial phase shift	°	1	Initial phase shift	°
Final phase shift	°	1	Final phase shift	°
Initial reflection coefficient	-	1	Initial reflection coefficient	-
Final reflection coefficient	-	1	Final reflection coefficient	-
Initial transmission coefficient	-	1	Initial transmission coefficient	-
Final transmission coefficient	-	1	Final transmission coefficient	-
Initial S-parameter	-	1	Initial S-parameter	-
Final S-parameter	-	1	Final S-parameter	-
Initial Y-parameter	-	1	Initial Y-parameter	-
Final Y-parameter	-	1	Final Y-parameter	-
Initial Z-parameter	-	1	Initial Z-parameter	-
Final Z-parameter	-	1	Final Z-parameter	-
Initial ABCD-parameter	-	1	Initial ABCD-parameter	-
Final ABCD-parameter	-	1	Final ABCD-parameter	-
Initial scattering matrix	-	1	Initial scattering matrix	-
Final scattering matrix	-	1	Final scattering matrix	-
Initial admittance matrix	-	1	Initial admittance matrix	-
Final admittance matrix	-	1	Final admittance matrix	-
Initial impedance matrix	-	1	Initial impedance matrix	-
Final impedance matrix	-	1	Final impedance matrix	-
Initial transmission matrix	-	1	Initial transmission matrix	-
Final transmission matrix	-	1	Final transmission matrix	-
Initial reflection matrix	-	1	Initial reflection matrix	-
Final reflection matrix	-	1	Final reflection matrix	-
Initial coupling matrix	-	1	Initial coupling matrix	-
Final coupling matrix	-	1	Final coupling matrix	-
Initial isolation matrix	-	1	Initial isolation matrix	-
Final isolation matrix	-	1	Final isolation matrix	-
Initial crosstalk matrix	-	1	Initial crosstalk matrix	-
Final crosstalk matrix	-	1	Final crosstalk matrix	-
Initial delay matrix	-	1	Initial delay matrix	-
Final delay matrix	-	1	Final delay matrix	-
Initial group delay matrix	-	1	Initial group delay matrix	-
Final group delay matrix	-	1	Final group delay matrix	-
Initial phase shift matrix	-	1	Initial phase shift matrix	-
Final phase shift matrix	-	1	Final phase shift matrix	-
Initial reflection coefficient matrix	-	1	Initial reflection coefficient matrix	-
Final reflection coefficient matrix	-	1	Final reflection coefficient matrix	-
Initial transmission coefficient matrix	-	1	Initial transmission coefficient matrix	-
Final transmission coefficient matrix	-	1	Final transmission coefficient matrix	-
Initial S-parameter matrix	-	1	Initial S-parameter matrix	-
Final S-parameter matrix	-	1	Final S-parameter matrix	-
Initial Y-parameter matrix	-			

### In the Claims:

**Please amend claims 9, 17 and 18.**

9. An AWG according to claim 1, wherein each ~~input/output~~ waveguide is a double-mode waveguide.
17. An array waveguide grating (AWG) device according to claim 1, wherein the first and second slab couplers are arranged so that a longitudinal axis of the second slab coupler is substantially perpendicular to a longitudinal axis of the first slab coupler, said ~~input/output~~ waveguides are arranged to receive zero order output signals imaged at an output face of the second slab coupler, and the AWG device further includes additional waveguides optically coupled to the second slab coupler for conveying higher order signals comprising at least some first order output signals, away from the second slab coupler.
18. An AWG according to claim 17, wherein the ~~input/output~~ waveguides are arranged so as to bend away from an area into which non-zero order output signals imaged by the second slab coupler, comprising at least some first order output signals, diverge from the second slab coupler.